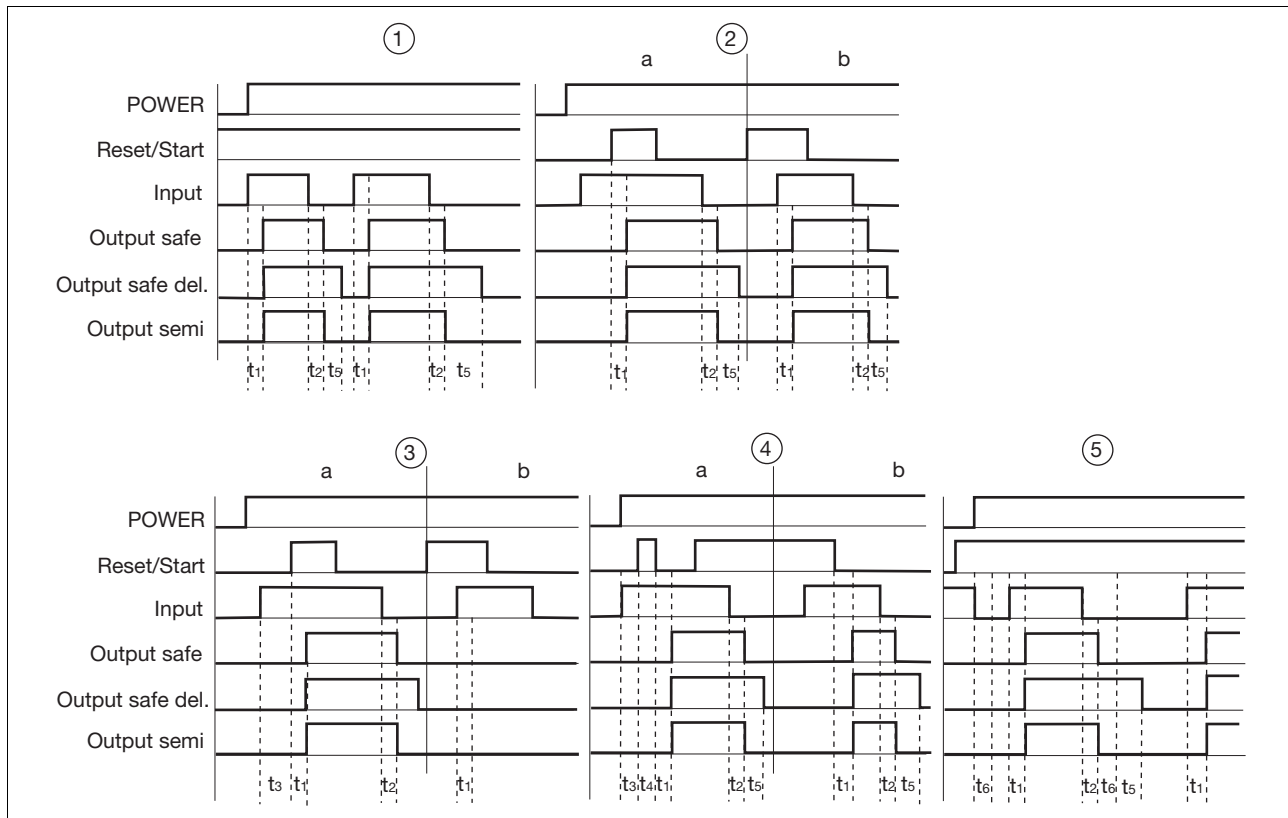


Up to PL e of EN ISO 13849-1 PNOZ s5

Timing diagram



Key

- ▶ Power: Supply voltage
- ▶ Reset/Start: Reset circuit S12-S34
- ▶ Input: Input circuits S11-S12, S21-S22
- ▶ Output safe: Safety contacts 13-14, 23-24
- ▶ Out semi: Semiconductor output Y32
- ▶ ⓪: Automatic reset
- ▶ ②: Manual reset
- ▶ ③: Monitored reset with rising edge
- ▶ ④: Monitored reset with falling edge
- ▶ ⑤: Reset with start-up test
- ▶ a: Input circuit closes before reset circuit
- ▶ b: Reset circuit closes before input circuit
- ▶ t_1 : Switch-on delay
- ▶ t_2 : Delay-on de-energisation
- ▶ t_3 : Waiting period
- ▶ t_4 : Waiting period reset circuit was closed
- ▶ t_5 : Delay time
- ▶ t_6 : Minimum time safety gates open

Wiring

Please note:

- ▶ Information given in the "Technical details" must be followed.
- ▶ Outputs 13-14, 23-24 are instantaneous safety contacts, outputs 37-38, 47-48 are delay-on de-energisation safety contacts.
- ▶ To prevent contact welding, a fuse should be connected before the output contacts (see technical details).
- ▶ Calculation of the max. cable runs I_{max} in the input circuit:

$$I_{max} = \frac{R_{lmax}}{R_l / km}$$

R_{lmax} = max. overall cable resistance (see technical details)
 R_l / km = cable resistance/km

- ▶ Use copper wire that can withstand 60/75 °C.
- ▶ Sufficient fuse protection must be provided on all output contacts with capacitive and inductive loads.
- ▶ With U_B 48 – 240 VAC/DC: Connect S21 to the protective earth system

Up to PL e of EN ISO 13849-1 PNOZ s5

Preparing for operation

► Supply voltage

Supply voltage	AC	DC

► Input circuit

Input circuit	Single-channel	Dual-channel
E-STOP without detection of shorts across con- tacts		
E-STOP with detection of shorts across contacts		
Safety gate without detection of shorts across con- tacts		
Safety gate with detection of shorts across contacts		
Light beam device or safety switch with detection of shorts across contacts via ESPE (only when $U_B = 24\text{ VDC}$)		